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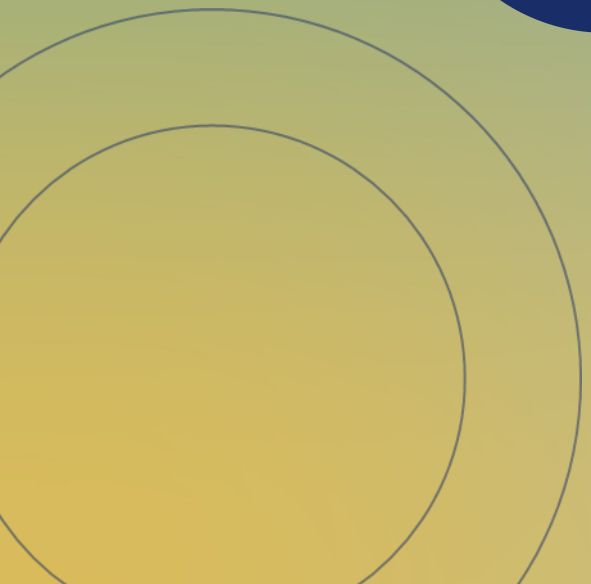

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Time-Series Exhaustive Automatic Modelling: a new methodology for model identification

Félix Aparicio Pérez, José Fernando Arranz Arauzo, **Carlos Sáez Calvo**, Luis Sanguiao Sande, María Teresa Vázquez Gutiérrez

S.G. for Methodology and Sampling Design

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Motivation

- Model-based seasonal adjustment (TRAMO-SEATS) requires identifying a RegARIMA model for the time series
- Revision policy requires re-identification of models once a year
- Manual identification is unfeasible (hundreds of series, short time span, lack of resources)
- Currently available automatic modelling procedures are unsatisfactory (only one model, sometimes not adequate)

Objectives

- Automatize the annual phase of the revision process in seasonal adjustment
- Produces a list of the best models for a time series according to some criteria adjustable by the user
- Uses the JDemetra+ packages to adjust the models and obtain the quality indicators

Methodology

There are three phases in the execution of TEAM:

1. Establish the specifications to use
2. TEAM computes all the specifications using JDemetra+, and obtains quality indicators
3. The specifications are ranked according to a score adjustable by the users.

Ranking of specifications

The quality dimensions taken into account are:

- Goodness of the RegARIMA model
- BIC
- Goodness of the canonical decomposition (SEATS)
- Magnitude of revisions
- Residual seasonality

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Conclusions

- TEAM is a software for automatizing the identification model phase of the revision policy (but can be also useful for other uses)
- The software provides a selection of good models and not just one model
- The users are allowed to favor models according to some criteria

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